

THE CLAIMS

What is claimed is:

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1. A bone sheet for implantation, the sheet comprising an at least partially demineralized field substantially surrounding at least one mineralized region.

2. The bone sheet according to claim 1 having at least one rib providing
10 localized thickness to the sheet.

3. The bone sheet according to claim 1, wherein the sheet is formed of cortical bone.

4. The bone sheet according to claim 3 wherein the sheet comprises a
15 plurality of mineralized regions.

5. The bone sheet according to claim 4 wherein at least two of the mineralized regions are connected by a strut.
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6. The bone sheet according to claim 3, wherein the at least one mineralized region defines at least one hole in the sheet.

7. The bone sheet according to claim 6, wherein the at least one hole is
25 configured and dimensioned to receive at least one fastener.

8. The bone sheet according to claim 3, wherein the sheet has a thickness of between about 0.5 mm and about 3 mm.

9. A method of forming a flexible bone sheet comprising:
30 providing a sheet of cortical bone;
creating at least one hole in the cortical sheet which is configured and dimensioned to receive a fastener;
masking the cortical sheet proximate the at least one hole to create a masked
35 region surrounding the at least one hole; and

applying demineralizing agents to the cortical sheet around the masked region.

10. The method according to claim 9, wherein a plurality of masking
5 elements are removably attached to the sheet to provide masking proximate the at least one hole.

11. The method according to claim 9, wherein the masking is provided
by at least one of the group consisting of tape, paint, and a coating.

12. The method according to claim 9, further comprising creating
10 perforations in the sheet that are substantially smaller than the at least one hole.

13. The method according to claim 9, further comprising cutting a bone
15 section along a spiral path.

14. A sheet formed of bone comprising two or more strips of bone each
having a bone grain orientation, wherein the bone grain orientation of at least one strip is
disposed transverse to the grain orientation of another strip.

15. The sheet according to claim 14, wherein the strips are interwoven.

16. The sheet according to claim 14, wherein the strips are selected from
at least one of the group consisting of mineralized bone, demineralized bone, and partially
25 demineralized bone.

17. The sheet according to claim 14, wherein a portion of at least one
strip is at least partially demineralized.

18. The sheet according to claim 14, wherein the strips are interwoven to
30 form a plurality of generally parallel rows and a plurality of generally parallel columns.

19. The sheet according to claim 14, wherein the strips have a width
between about 1 mm and about 6 mm.

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20. The sheet according to claim 19, wherein the strips have a thickness of between about 0.5 mm and about 2 mm.

21. The sheet according to claim 14, wherein the strips have a width of
5 about 5 mm and a thickness of about 1 mm.

22. The sheet according to claim 14, wherein the bone strips are unitary in construction.

10 23. The sheet according to claim 14, wherein at least one strip is formed by braiding two or more bone fibers.

24. The sheet according to claim 14, wherein each bone strip has a longitudinal axis and the bone grain orientation is substantially parallel thereto.
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